XVIII. *An Intersex of* Amorpha populi. By E. A. Cockayne, M.A., D.M., F.R.C.P., F.E.S.

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The specimen was sent to me for dissection by Mr. L. W. Newman, who had noticed that although the head, thorax and wings appeared to be male, the abdomen was full and rounded like that of a female.

Dissection showed that the testes were large and lobulated, the four follicles of the two testes forming a cluster; whereas normally the two testes are fused and the eight follicles twisted spirally assume an almost spherical form. In the abnormal specimen the eight follicles were white, but in normal specimens the capsule of the fused organs is a deep yellow colour. Careful measurement showed that the calices, vesiculae seminales and vasa deferentia were broader and the glandulae accessoriae broader and shorter than in a number of normal males. Serial sections taken through the whole organ showed numerous spermatozoa and some spermatocytes in all the follicles, and in some there were a few objects, which appeared to be large cells with deeply stained basophile nucleus and cytoplasm. These were kindly examined by Dr. Goodrich, who thinks they are probably masses of spermatozoa closely crowded together, but they may be abnormal cells. The external genitalia were mounted and measured. The penis and uncus were both shorter and broader than in normal males, the gnathus, 10th abdominal sternite, was very short and broad, and ended bluntly instead of tapering gradually. It was only about half the length of a normal scaphium. The valves were not evenly spread, but they were of normal length. The cornuti on the vesica of the penis were fewer than normal, about forty-five small and large were counted. The normal penis has about fifty-six. No minute cornuti were seen at all, though they are usually numerous. Plate XCV, fig. 1, shows the internal organs of a normal male, fig. 2 shows those of the abnormal individual.

The chief interest of the specimen lies in the fact that

Goldschmidt in crossing European *Lymantria dispar* with its large Japanese race, var. *japonica*, obtained individuals in some broods which were only distinguishable from males by possessing small flecks of light colour, like that of the female, equally distributed over all four wings. These he called first "Weibchenmännchen" and later "Intersexes." Internally some had normally shaped testes, but others had lobulated testes without any yellow pigment in the capsule. He gives a figure on p. 296 of his paper, which can be compared with mine.

Most of those with normally shaped testes had spermatozoa and spermatocytes only, but in some of the lobulated testes there were in addition small or large numbers of oocytes and ova.

The external genitalia of Goldschmidt's specimens were male in character, but with some modification of shape. The penis, uncus, saccus and valves were shorter and broader than normal. In addition to the "Weibchenmännchen," numbers of moths were bred which showed a more striking mixture of male and female characters, and in his earlier papers Goldschmidt called these male and female gynandromorphs; but wishing to distinguish them from ordinary halved gynandromorphs, which must arise from a different cause, he has grouped all of them under the name "Intersex."

The resemblance between this specimen of *A. populi* and these Lymantrias is so close in most respects that I am inclined to think it must be of the same nature. Like the Lymantrias it arose from crossing various races of British *populi* for several generations.

Bibliography.

Goldschmidt and Poppelbaum. Zeitschr. f. Indukt. Abstamm. u. Vererbungslehre, 1914, xi, p. 296.

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